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Thierry Klethy

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EXAMINER

TOLIN, MICHAEL A

ART UNIT

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/586,483	<b>Applicant(s)</b> KLETHY ET AL.	
	<b>Examiner</b> MICHAEL A. TOLIN	<b>Art Unit</b> 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 April 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6,8 and 9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6,8 and 9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>7-20-06</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of claims 1-6, 8 and 9 in the reply filed on 10 April 2009 is acknowledged.

### ***Information Disclosure Statement***

2. The foreign patent documents listed on the information disclosure statement filed 20 July 2006 have not been considered because Applicant has not submitted copies of these documents as required by 37 CFR 1.98(a)(2).

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

There is no antecedent basis for "the outlet of production of the reinforcement". The examiner suggests adding language to introduce the outlet and the reinforcement.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-4, 6, 8 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Fowler (US 6447705).

Fowler teaches a process for the production of a fiber reinforced part adapted to be embedded in a matrix comprising the steps of providing a fiber-based material and spraying an adhesive resin thereon (column 1, lines 31-45; column 2, line 13-30 headlines 55-67 column 3, lines 1-17). It is noted that the specification does not assign any particular definition to the term armature. Accordingly, this term has been broadly interpreted as a part. As to the recitation of “preparing” a fiber-based material, such does not distinguish over Fowler’s teaching of moving the fiber-based material at a controlled rate while adhesive resin is sprayed thereon (column 2, lines 26-30).

Alternatively, one of ordinary skill in the art would have readily appreciated that the non-woven fabric or mat suggested by Fowler is provided by some type of manufacturing process, thus satisfying the claimed step of preparing. As to the limitation of being repositionable, it is clear from Fowler that the adhesive resin has thermoplastic properties at the temperatures used for layup of a fiber-based material (column 2, lines 18-19, lines 34-38, and lines 65-67). Thermoplastic adhesive materials are inherently

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repositionable because the adhesive can be reheated to a molten state, allowing such repositioning.

The limitations of claims 2-4, 8 and 9 are clearly taught by Fowler (column 2, lines 1-6 and lines 55-62; column 3, lines 11-17; Example 1). Regarding the limitation of avoiding pollution, Fowler indicates that the resin is fully reactive (column 2, line 2) and provides an example in which the resin is entirely comprised of reactive epoxy (Example 1). Accordingly it is clear that the resin is compatible with the matrix and will not give rise to pollution.

Regarding claim 6, a hot melt glue may comprise various compositions, but in its broadest sense requires no more than a thermoplastic material which becomes tacky upon heating and sets upon cooling. Since the resin of Fowler clearly has these properties, it is considered to satisfy the claimed hot melt glue.

7. Claims 1 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by 102(b), Flonc (US 5080851).

The claims are rejected here to further address the limitation of a repositionable adhesive.

Flonc teaches a method of making a fiber reinforced part wherein a prepared fibrous material is sprayed with a repositionable adhesive (column 3, lines 10-38). Flonc teaches that the use of a repositionable adhesive greatly facilitates the formation of complex composite parts (column 3, lines 37-38). As to the claimed step of preparing, one of ordinary skill in the art would have readily appreciated that the fibrous

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material of Flonc is provided by some type of manufacturing process, thereby satisfying the claimed preparing limitation.

Regarding claim 4, Flonc indicates that the adhesive is fully compatible and reactive with the subsequently injected resin (column 2, lines 54-68). Accordingly it is clear that the resin is compatible with the matrix and will not give rise to pollution.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-6, 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fowler.

The claims are rejected here in the alternative to further address the claimed preparing step.

While Fowler does not explicitly recite preparing the fiber-based material, the fibrous mat materials suggested by Fowler are conventionally manufactured using a variety of well known processes, thus satisfying the claimed step of preparing. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide claimed step of preparing because one of ordinary skill in the art would have

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been motivated to provide the mat materials suggested by Fowler in accordance with conventional methods.

Regarding claim 5, it is generally well known in the art that adhesive may be applied to a substrate material “in-line” prior to winding up the product, i.e. at the claimed outlet, or one may unwind the substrate material in a separate operation and apply the adhesive. Selection between these well known alternatives involves no more than expected and routine experimentation or design choice to provide a suitable process for applying the adhesive. Further, the in-line process has the readily apparent advantage of reducing manufacturing steps. It is noted that Fowler teaches application by spraying (column 2, lines 25-30). It would have been obvious to one of ordinary skill in the art at the time of the invention to apply the adhesive by spraying at the outlet of production because one of ordinary skill in the art would have been motivated to provide the adhesive coated reinforcement of Fowler in accordance with well known suitable methods of adhesive application as a matter of routine design choice or experimentation, or because one of ordinary skill in the art would have been motivated to reduce manufacturing steps by applying adhesive in the well known “in-line” process.

10. Claims 1, 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Flonc.

The claims are rejected here in the alternative to further address the claimed preparing step. While Flonc does not explicitly recite preparing the fiber-based material, the fibrous materials suggested by Flonc are conventionally manufactured using a

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variety of well known processes, thus satisfying the claimed step of preparing. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide claimed step of preparing because one of ordinary skill in the art would have been motivated to provide the fibrous materials suggested by Flonc in accordance with conventional methods.

The discussion of claim 5 in numbered paragraph 9, above, is incorporated herein. Claim 5 is satisfied for the reasons provided in the above numbered paragraph.

11. Claims 2, 3, 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Flonc as applied to claims 1, 4 and 5 above, and further in view of Fowler.

Regarding the limitations of claims 2 and 3, Fowler suggests providing a suitable stock material by placing a removable separator and rolling up as claimed (column 2, lines 55-67). It is generally well known in the art that such separators are used in order to provide improved handling and also to prevent contamination of the fibrous material. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the limitations of claims 2 and 3 because one of ordinary skill in the art would have been motivated to provide a known suitable stock material for manufacturing composite parts in accordance with the teachings of Fowler and to improve handling and prevent contamination in accordance with well known methods.



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12. Claims 1 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Swift (WO 94/26505 A1) in view of either one of Adams (US 4349599) or Freeman (US 5000990), and further into a Flonc.

The claims are rejected here in the alternative to provide further motivation for using hot melt glues.

Swift teaches a method of making a fiber reinforced part wherein a prepared fiber-based material is provided. In one embodiment, a heat activatable adhesive is placed on the fiber-based material prior to placement of the material in a mold (page 3). While Swift does not explicitly recite preparing the fiber-based material, the fibrous mat materials suggested by Swift are conventionally manufactured using a variety of well-known processes, thus satisfying the claimed step of preparing. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the claimed step of preparing because one of ordinary skill in the art would have been motivated to provide the mat materials suggested by Swift in accordance with conventional methods.

While Swift indicates the use of a heat activated adhesive, Swift does not explicitly recite the use of a repositionable hot melt glue. As to the use of hot melt glues, it is well known in the art to use such glues for positioning of fibrous materials during layup. For example, see Adams (Abstract; column 1, lines 43-52). Or see Freeman (column 3, lines 23-27 and lines 34-38). It is noted that such adhesives are inherently repositionable because hot melt adhesives soften upon heating. As evidence for this assertion, see Flonc. Flonc indicates that thermoplastics, hot melts being

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thermoplastic materials, can be repositioned with heating (column 3, lines 28-30). Flonc further teaches that repositionable adhesives are desirable for facilitating the manufacture of complex composite parts (column 3, lines 37-38). Accordingly, one of ordinary skill in the art would also have been motivated to use a repositionable hot melt adhesive in order to achieve the benefits of a repositionable adhesive suggested by Flonc. Suitable repositionable hot melts are well known. While the examiner acknowledges that Flonc seeks to use a solid uncatalyzed resin due to its advantages over hot melts, it is apparent from either one of Adams or Freeman that hot melts have been used in the art for positioning fibrous materials during layup and that such adhesives are suitable. It is also clear from Flonc that such adhesives are repositionable and that repositionable adhesives have advantages in the production of complex parts. Selection from among known suitable adhesives involves no more than expected and routine experimentation for one having ordinary skill in the art. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide a repositionable hot melt adhesive as the heat activated adhesive of Swift because one of ordinary skill in the art would have been motivated to use known suitable adhesives in accordance with either one of Adams or Freeman, such adhesives being repositionable as evidenced by Flonc. Alternatively, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide a repositionable hot melt adhesive as the heat activated adhesive of Swift because one of ordinary skill in the art would have been motivated to select a suitable well known repositionable hot melt adhesive to achieve the above noted advantages of repositionable adhesives in

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accordance with the teachings of Flonc, hot melt adhesives being known suitable adhesives as evidenced by either one of Adams or Freeman.

### ***Conclusion***

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL A. TOLIN whose telephone number is (571)272-8633. The examiner can normally be reached on M-F 9am to 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on 571-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael A Tolin/  
Examiner, Art Unit 1791